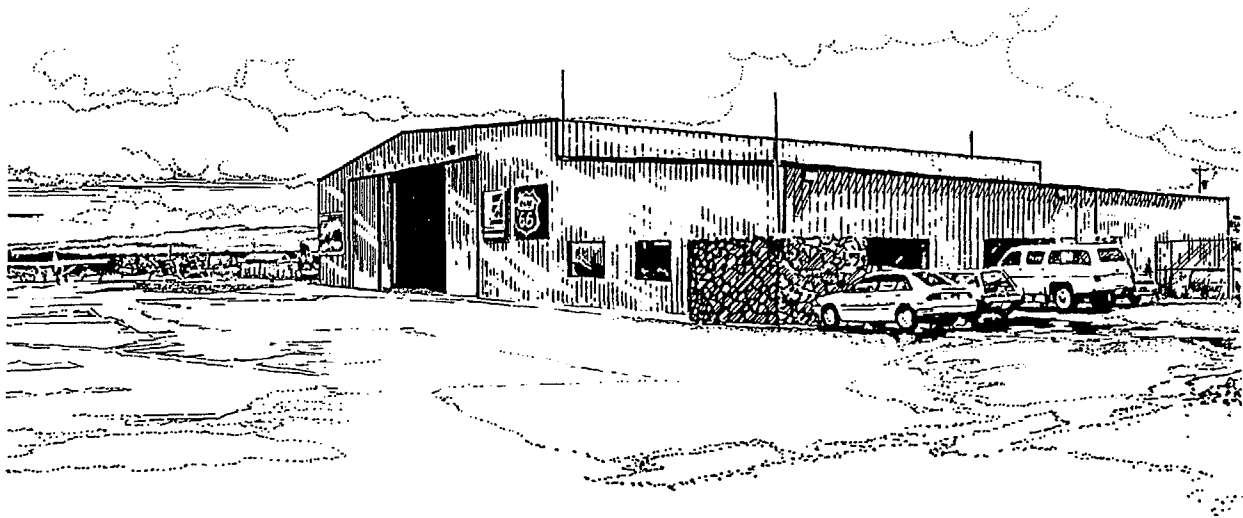




INVENTORY



Chapter One INVENTORY

Springerville Municipal Airport

The planning process for developing an airport master plan for Springerville Municipal Airport began with the compilation of information regarding the existing condition of the airport and its environs. Information collected and analyzed for this chapter include the following.

- ▶ A catalog and description of the physical facilities available and services provided at the airport.
- ▶ A review of historical air traffic activity and air traffic procedures at Springerville Municipal Airport, and an assessment of local airspace.
- ▶ The compilation of background information pertaining to the airport, Springerville, Eager, and the surrounding region.
- ▶ The compilation of population, employment and other socioeconomic statistics which might provide an indication of future growth in the region.
- ▶ A comprehensive review of the existing local, regional and state plans and studies to determine their potential influence on the airport.

An accurate and complete inventory is essential to the success of a master plan study. The findings and recommendations made in the master plan are heavily dependent on the information collected during the study; therefore, the information collected concerning conditions on and around the airport must be as reliable and up-to-date as possible.

The information summarized in this chapter was obtained through on-site investigations

of the airport and interviews with airport management, representatives of Springerville, Eager, Apache County, the State of Arizona, and the United States Forest Service. Additional information was collected from historical records, available documents and studies concerning the local communities and Springerville Municipal Airport.

AIRPORT SETTING

The Town of Springerville is located in the Round Valley area of east-central Arizona, roughly 12 miles from the border with New Mexico, as illustrated on Exhibit 1A, *Vicinity Map*. Springerville is considered the eastern gateway to the White Mountains, a popular recreational area for hunting, fishing, skiing, and camping. Springerville Municipal Airport is located on top of a wide mesa, approximately one mile west of the town center. The mesa itself is low, rising only 40 to 75 feet over the surrounding valley. The airport is located within Sections 31 and 32 of Township 9 North, Range 29 East and Sections 5 and 6 of Township 8 North, Range 29 East.

Springerville Municipal Airport is located near the intersection of U.S. 60 and State Highway 260 in Springerville. It also has access to U.S. 180 and U.S. 666 which form a north-south route between Interstate 40 (77 miles north) and Interstate 10 (200 miles south of the airport). Centrally located between the capitals of Arizona and New Mexico, the airport is 221 miles northeast of Phoenix and 234 miles west of Albuquerque. In addition, the airport is 46 miles east of Show Low and 29 miles south of St. Johns, the Apache County seat.

The airport is at an elevation of 7,052 feet MSL (above Mean Sea Level). Elevations

north, east and west of the airport, are relatively flat, varying between 6,900 feet MSL and 7,200 feet MSL. To the south, elevations rise sharply as the valley floor makes way for the foothills of the White Mountains. Less than two miles south of the airport, the terrain quickly rises to over 7,300 feet MSL and then continues to rise to over 8,000 feet MSL within four miles from the southwest end of Runway 3-21. The Escudilla Mountains and the White Mountain's Baldy Peak lie within 20 nautical miles southeast and southwest of the airport, respectively. At an elevation of 11,590 feet, Baldy Peak is the second highest mountain in the State.

CLIMATE

Weather conditions play an important role in the planning and development of an airport. Temperature is an important factor in determining runway length and wind direction/speed are used in determining the optimum runway orientation. The percentage of time that visibility is impaired due to cloud coverage or other conditions is a major factor in determining the need for navigational aids and lighting.

The climate in the Springerville area is influenced by its location in the Round Valley. During the winter, the mild climate of the valley, as compared to that of the surrounding mountains, results in less snow fall and, generally, more moderate temperatures. The greatest precipitation occurs during the summer monsoon season (July and August), as a result, these months also see the greatest number of overcast days. According to representatives of Tucson Electric Power, which operates a wind and temperature monitoring station at the airport, from July 15 through September 15 there is generally afternoon cloud cover.

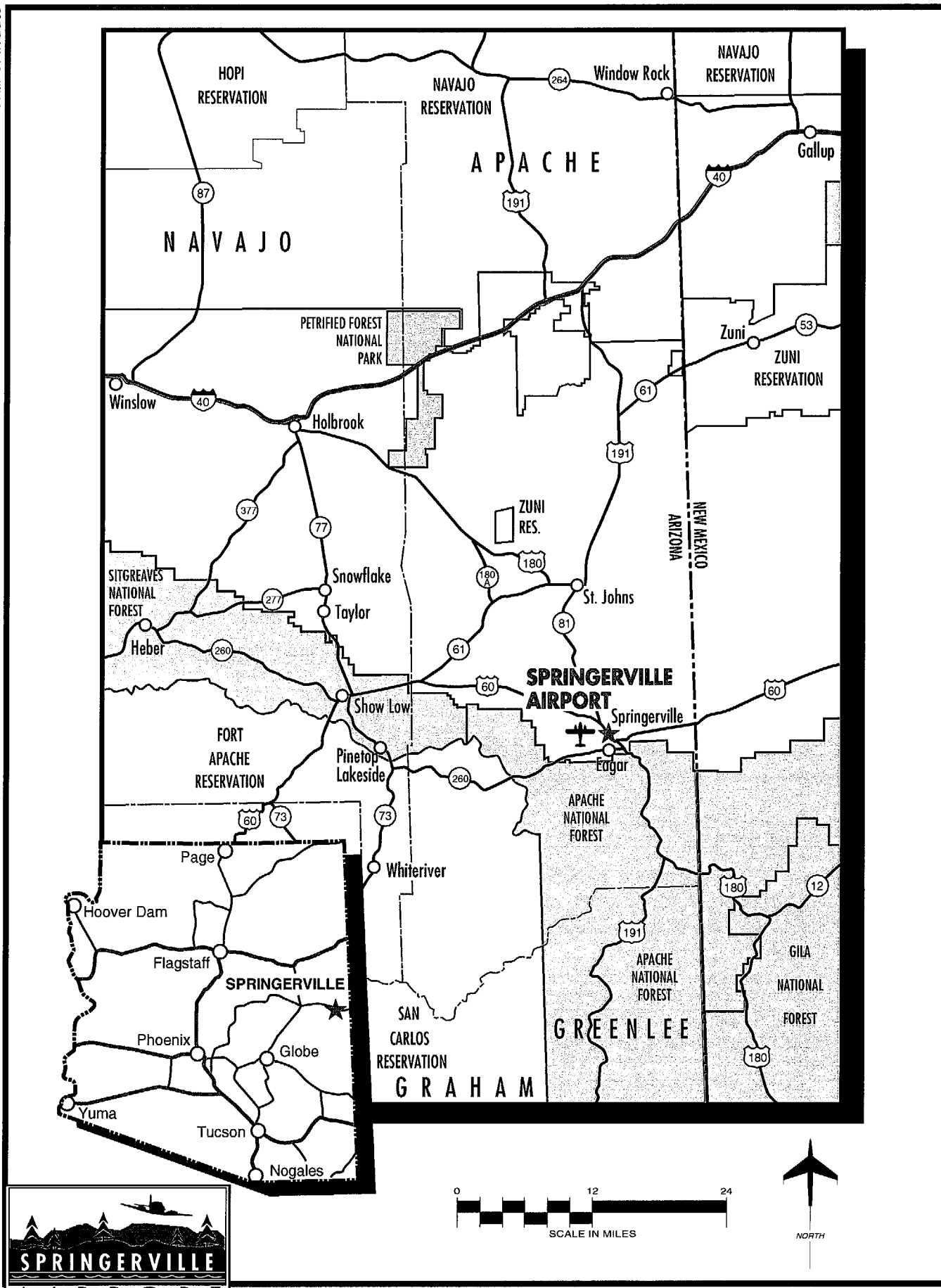


Exhibit 1A
VICINITY MAP

Cloud cover is intermittent the remainder of the year.

The average annual precipitation in the area is approximately 11.33 inches, the majority of which is rain. Over 30 inches of snow, sleet and hail may be expected annually. Average temperatures in mid-

summer range from morning lows of 43.6 degrees Fahrenheit to afternoon highs near 83 degrees. Average winter temperatures generally range from 14 to 55 degrees Fahrenheit. Table 1A, **Weather Summary**, depicts the average temperatures and precipitation for the area.

TABLE 1A
Weather Summary
Springerville Reporting Station

Month	Average Temperature (°F)		Average Total Precipitation (Inches)
	Daily Maximum	Daily Minimum	
January	46.7	14.6	0.56
February	50.6	17.9	0.36
March	55.4	22.1	0.59
April	64.1	29.5	0.31
May	72.7	35.9	0.31
June	81.3	43.6	0.43
July	83.3	51.6	2.48
August	81.0	49.3	2.91
September	77.6	42.6	1.54
October	68.8	32.0	0.97
November	57.1	21.6	0.37
December	49.2	15.6	0.50
Year	65.7	31.4	11.33
Average Total Snow, Sleet and Hail Annually: 30.5 inches (based on a 30 year average).			
SOURCE: Arizona Department of Commerce, Research and Communication Division; 1987.			

Prevailing winds at Springerville Municipal Airport are primarily out of the southwest, favoring the use of Runway 21. According to *FAA Advisory Circular 150/5300-13*, the desirable wind coverage for an airport is 95 percent, based on the total number of weather observations. The windrose

illustrated on Exhibit 1B, **All Weather Windrose**, was prepared using historical data recorded at the airport and supported by recent data provided by Tucson Electric and Power.

AIRPORT DEVELOPMENT HISTORY

The current site of Springerville Municipal Airport was selected in the 1940's when the residents of the Town decided to construct an airport on one of the landing fields used by the original barnstormers. The unpaved field was originally owned by the Springerville-Eager Airport Corporation until the Town of Springerville acquired the land in 1948. The property was transferred with the express provision that the land be used solely for the purpose of developing an airfield.

The airport remained an unpaved field until 1962 when the town graded and paved Runway 3-21. The following year Runway 3-21 was extended to 4,400 feet and strengthened. In addition, the Arizona Department of Transportation purchased Low Intensity Runway Lights (LIRLs) for the primary runway. From 1968 through 1972, using State and Federal funding, the Town of Springerville acquired additional land, extended Runway 3-21 to 5,600 feet, provided runway turnarounds and a stub taxiway to the main ramp, and installed a fuel pump, tanks and lights. The State purchased a beacon for the airport in 1969. In 1973 the Town reconstructed the ramp and installed Medium Intensity Runway Lights (MIRLs). Between 1979 and 1984, a 3,900 foot parallel taxiway to Runway 3-21 was constructed, 50 acres of land were acquired, security fencing was installed, and Runway 3-21 was extended to 6,600 feet.

Since completion of the 1987 Master Plan for Springerville Municipal Airport, the Town has constructed a 4,800 foot cross-wind runway (Runway 11-29), expanded the ramp, constructed parking areas for both long and short-term parking, constructed a new 10,000 square foot hangar with attached 4,000 square foot

terminal/fixed based operator facility, reconstructed Airport Road from Becker Lake Road to the airport, and overlaid the parallel taxiway for Runway 3-21 and a portion of the ramp, and, most recently, extended runway 3-21 to 8,400 feet. In addition the town has acquired additional land and easements to accommodate the runway and the clear zones for Runway 3-21.

In 1994, the FAA issued a grant to the Town of Springerville to construct a parallel taxiway for Runway 11-29 and install approximately 14,000 linear feet of perimeter fencing. In addition, ADOT has issued a grant for an extension of the municipal sewer line to the airport, along Airport Road.

EXISTING AIRPORT FACILITIES

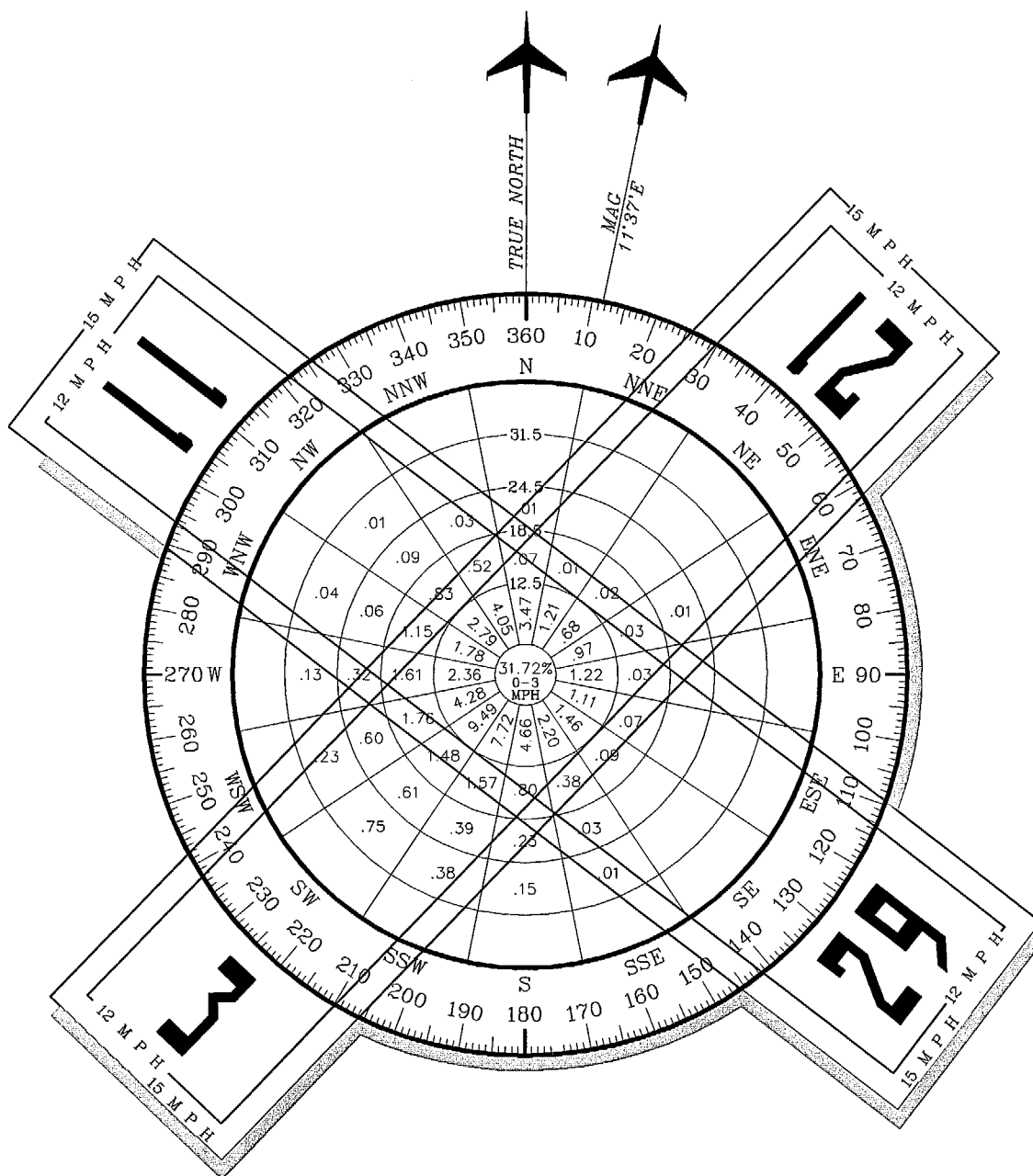
Airport facilities at Springerville Municipal Airport include airside, landside and airport support facilities. These are described in the following paragraphs and are illustrated on Exhibit 1C, Existing Facilities.

AIRSIDE FACILITIES

Airside facilities are those that are directly associated with aircraft operating to and from the airport. Runways, taxiways, navigational aids, and airport lighting are examples of airside facilities. The airside facilities as they relate to Springerville Municipal Airport are described in the following paragraphs.

Runways

Springerville Municipal Airport currently operates with two runways. The primary

**SOURCE:**

Tuscon Gas & Electric
Readings taken at
Springerville Municipal Airport
Springerville, Arizona

OBSERVATIONS:

July 1984 - March 1986

ALL WEATHER WIND COVERAGE

	12 M.P.H.	15 M.P.H.
<i>Runway 3-21</i>	93.14%	95.91%
<i>Runway 11-29</i>	88.89%	90.00%
<i>Combined Coverage</i>	98.89%	99.77%



RUNWAY PROTECTION ZONE
250' X 1000' X 450'
20:1 VISUAL APPROACH

RUNWAY PROTECTION ZONE
250' X 1000' X 450'
20:1 VISUAL APPROACH

PERIMETER
FENCE

PAPI-4

RUNWAY 3-21 8425' X 75'

AIRPORT RD

BECKER LAKE RD.

RIVER

COLORADO

RIM ROCK
75' CLIFF

RUNWAY 11-29 4589' X 60'

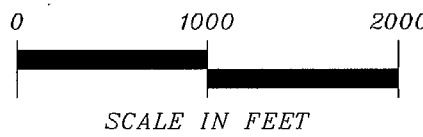
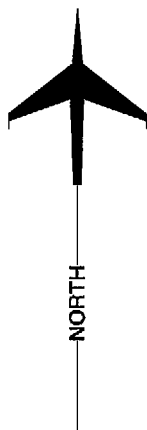
AIRPORT PERIMETER RD.

RUNWAY PROTECTION ZONE
250' X 1000' X 450'
20:1 VISUAL APPROACH

RUNWAY PROTECTION ZONE
250' X 1000' X 450'
20:1 VISUAL APPROACH

LEGEND:

- 1 GENERAL AVIATION
TERMINAL
- 2 CONVENTIONAL
HANGAR
- 3 AIRPORT BEACON
- 4 LONG-TERM
PARKING
- 5 PARKING
- 6 TUCSON ELECTRIC POWER
MONITORING STATION
- 7 SEGMENTED CIRCLE/
LIGHTED WIND CONE
- 8 NDB POLES



runway, Runway 3-21, is constructed of asphalt and is 8,425 feet in length and 75 feet in width. In 1986, Western Technologies performed a pavement strength analysis on the runway. At the time, Runway 3-21 had a rated pavement strength of 12,500 pounds single wheel loading (SWL). The effective runway gradient is 0.51 percent sloping down to the northeast.

Runway 11-29, the cross-wind runway, is 4,589 feet in length by 60 feet in width and is also constructed of asphalt. No pavement strength analysis has been performed on this runway; therefore, its pavement strength is unknown at this time. The effective runway gradient is zero percent as the runway ends are at the same elevation; however, portions of the runway are at an elevation of up to 10 feet higher than the runway ends. The runway pavement is cracked in places with weeds growing up through the cracks.

Taxiways

Taxiways are provided to facilitate aircraft movement between the runway and the terminal areas. There are eight taxiways existing at Springerville Municipal Airport. Runway 3-21 is equipped with a full length, 30 foot wide, parallel taxiway on its southeast side. The runway and parallel taxiway are connected by six stub taxiways. The end taxiways are each approximately 50 feet in width. The acute angle taxiway, located near the southwest end of the runway, is approximately 75 feet in width; this taxiway is not located to be used as a runway. The three remaining connecting taxiways are each roughly 30 feet in width. The parallel taxiway is connected to the aircraft parking apron by a connecting taxiway of approximately 150 feet in width.

Lighting and Marking

A variety of lighting and marking aids are available at Springerville Municipal Airport to facilitate airport identification, approaches and landings both at night and during adverse weather conditions. These systems are categorized by function and are further described below.

Identification Lighting

The location and presence of an airport at night is universally indicated by an airport beacon equipped with an optical system that projects two beams of light, one green and one white. At Springerville Municipal Airport the beacon is located on top of the hangar on the east side of the property.

The airport is equipped with a lighted windsock, located between the Nondirectional Beacon poles, west of the apron area.

Obstruction Lighting

The Nondirectional Beacon (NDB) poles are topped by obstruction lights to warn pilots of their presence during both daylight hours and, particularly, after dark. These poles are located west of the existing apron area.

Runway and Taxi Lighting

Both runways are equipped with Medium Intensity Runway Lights (MIRL) and threshold lights, both of which outline the runway controlled by pilots at night. The taxiways are not lighted, instead they are outlined by reflectors.

Visual Aids

Runway 3-21 is equipped with Visual Approach Slope Indicator (VASI-2) lights on the left side of each runway approach end. VASIs aid in defining the approach glide path during relatively good weather conditions and have a daytime visual range of about three miles.

Runway 11 is equipped with a Precision Approach Path Indicator (PAPI) light system on the left side of the runway approach end. This system consists of two-color, high intensity lights focused at predetermined angles (3.7 degrees) to provide visual descent guidance information to the pilot during the final approach to the runway.

Springerville Municipal Airport is equipped with a segmented circle and lighted windsock adjacent the apron area. A segmented circle is a visual aid to pilots indicating the traffic pattern for each runway. The windsock indicates prevailing winds as well as the active runway; it is used when an air traffic control tower is not operating or available.

Markings

Markings are used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, approach type available to each runway end. At Springerville Municipal Airport, both Runway 3-21 and 11-29 are marked for visual approach capabilities. The taxiway markings are limited to the centerline.

Navigational Aids

Navigational aids (navaids) provide direction, range and/or position information

to pilots. Navaids are usually classified as either *enroute* or *terminal*. The enroute navaids provide point to point navigation, while the terminal navaids provide approach and landing guidance. Some navaids serve both enroute and terminal purposes.

Enroute Navigational Aids

Enroute navaids are comprised of two basic types of equipment, the VOR (very high frequency omnidirectional range) and the VORTAC (very high frequency omnidirectional range/tactical air navigation). The VOR provides bearing (direction) information to pilots while a VORTAC produces both bearing and distance information. The VOR is commonly linked with a DME (distance measuring equipment) to provide nearly identical service as the VORTAC. The VOR transmits radio signals every degree to provide 360 individual courses from the transmitting facility. Both the DME and TACAN (tactical air navigation system) provide slant range to the station in nautical miles (NM). The VOR, a VHF (very high frequency) facility, and the TACAN, a UHF (ultra high frequency) transmitter, are limited to line-of-sight transmissions; their ranges are affected by the altitude of the aircraft (e.g. slant range).

Exhibit 1D, Airspace, graphically depicts the location of this enroute navigational aid in relation to Springerville Municipal Airport.

Terminal Area Navigational Aids

Terminal navaids are those located at or near the airport while landing aids serve to assist the pilot in flying an appropriate glidepath to the runway end. Currently there are no active terminal area navaids

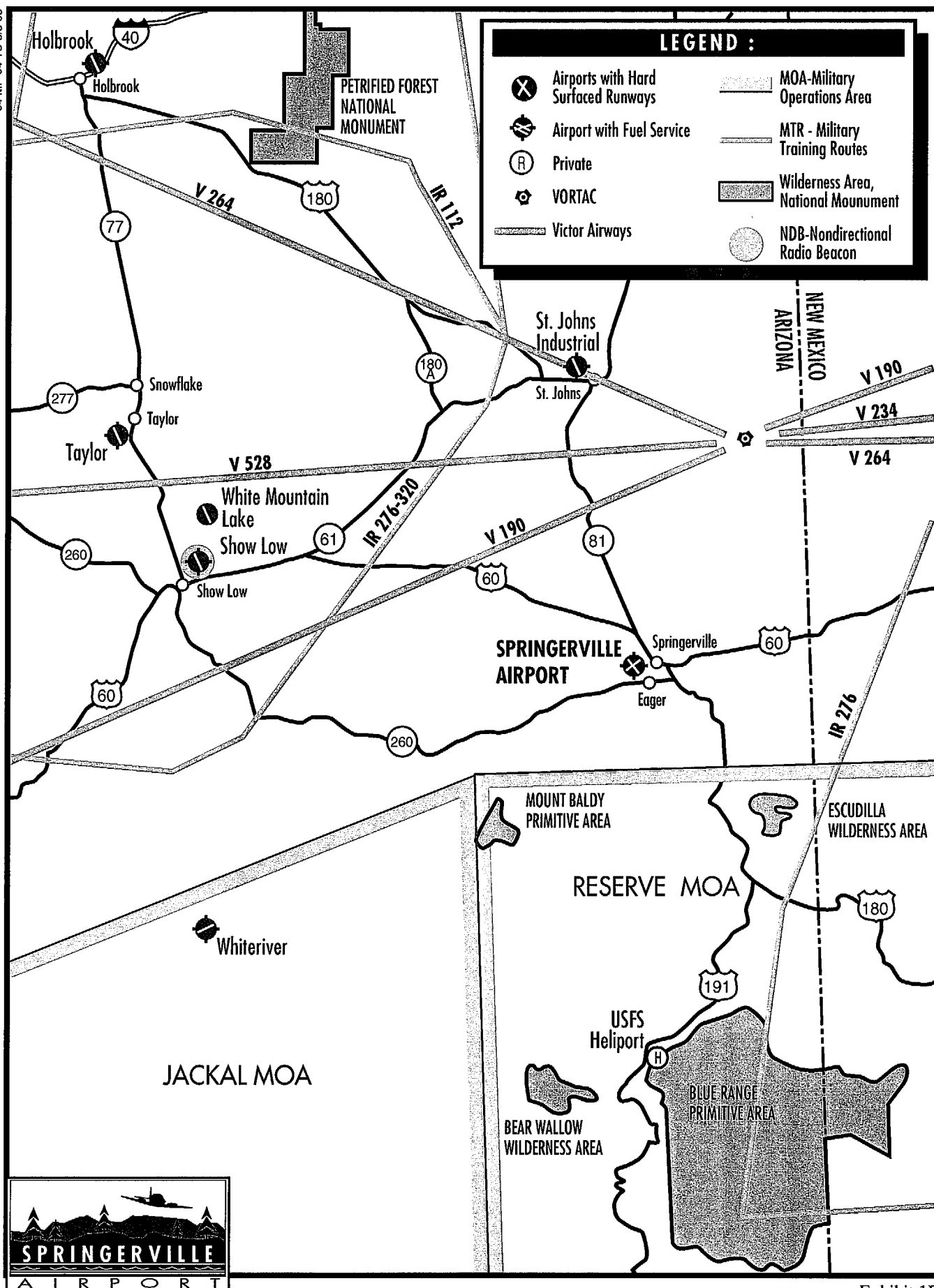


Exhibit 1D
AIRSPACE MAP

located at Springerville Municipal Airport. The airport had been equipped with a Nondirectional Beacon (NDB); however, the equipment was struck by lightning in 1992 and has never been repaired or replaced. An NDB transmits low or medium frequency nondirectional signals which allow pilots to determine their bearings and track or "home in" to that particular navigation station, in this case the airport. There are currently no plans to repair or replace the NDB.

LANDSIDE FACILITIES

In addition to the airside facilities, landside facilities are essential to the daily operation of Springerville Municipal Airport. Landside facilities primarily consist of those facilities required to accommodate aircraft, pilots and passengers while they are on the airport property. Landside facilities typically consist of terminal buildings, hangars, aircraft parking apron, fuel storage facilities, and automobile parking. At Springerville Municipal Airport, the landside facilities are located on the southeast side of Runway 3-21, east of Runway 11-29.

Fixed Base Operator

The Fixed Base Operator (FBO) facility at Springerville Municipal Airport is located east of the intersection of the primary and crosswind runways. It consists of a 10,000 square foot conventional hangar with an attached general aviation terminal building/FBO office area. FBO services are provided by Aerocrafter under lease with the Town of Springerville. Aerocrafter provides fuel services, both Jet A and 100LL aviation fuel, tiedown spaces, pilot training, scenic and charter flights, air taxi services, and aircraft maintenance services. Aerocrafter is a licensed Cessna repair

facility. The company currently employs three people at their Springerville Municipal Airport location.

Aircraft Apron and Parking Area

The parking apron at Springerville Municipal Airport is located adjacent the FBO hangar/office area. It is approximately 28,150 square yards (5.8 acres). The apron is marked for 51 tiedown spaces; however, a number of these are missing one or more of their tie-down chains. The pavement is cracked in multiple places on both the northeast and southwest ends; weeds are coming up through the cracks. Currently nine (9) tiedown spaces are used by based aircraft.

In 1994, the Town of Springerville has constructed a separate apron approximately 200 feet northeast of the existing apron. This apron area is approximately 4,170 square yards (0.86 acres) in size and will support privately owned and maintained T-hangars and port-a-port hangars.

Hangars and Other Buildings

With the exception of the 10,000 square foot conventional hangar and a privately owned port-a-port hanger, there are no hangars on the Springerville Municipal Airport property.

Tucson Electric Power Company operates a weather and pollution monitoring station at the airport. A 10,000 s.f. fenced-in area southwest of the apron houses the monitoring equipment, including an anemometer.

The owners/operators of Aerocrafter reside on the airport in a manufactured home located southwest of the hangar/office

building. Adjacent to the home is the privately owned port-a-port hangar.

Automobile Parking

Parking in the general aviation service area is limited and none of the spaces are specifically delineated. Within the fence, there are approximately five paved, head-in parking spaces immediately southwest of the terminal building. Behind these there are approximately two parallel parking spaces. Outside of the fence and southwest of the terminal building are approximately 15 paved, head-in parking spaces. Northeast of the conventional hangar is a small, unpaved parking area, primarily used by the U.S. Forest Service. It can park up to six vehicles. The apron is used for additional automobile parking.

Across Airport Road from the terminal building is an approximately 25,000 s.f., long-term parking lot. This lot is fenced and can hold approximately 50 cars, boats and recreational vehicles.

AIRPORT SUPPORT FACILITIES

Airport support facilities are those that are not classified as either airside or landside, but which play an important role in the function of Springerville Municipal Airport. Maintenance, utilities, firefighting, and fueling facilities are four areas which were reviewed.

Maintenance

The Town of Springerville provides maintenance support for Springerville Municipal Airport through its Department of Public Works. This includes both pavement repair and snow removal.

Utilities

The availability of utilities serving Springerville Municipal Airport is an important factor in determining the development potential of the airport property. Of primary interest in the area of the airport is the availability of public water, sanitary sewer, electricity, and storm sewer. Also of concern is the availability of a solid waste disposal facility and its proximity to the runway; these facilities have the propensity to attract birds which create a hazard for aircraft. Utilities at Springerville Municipal Airport are provided in the following manner.

- ▶ Public Water -- Potable water to the airport is provided by the Town of Springerville. According to representatives of the Town, water pressure at the airport is inadequate to serve additional growth on or adjacent the airport. The Town is considering the need for a second water tank in the vicinity of the airport in order to improve water pressure in the area.
- ▶ Sanitary Sewer -- Sanitary sewage at Springerville Municipal Airport is currently treated on-site in an underground septic system. The Town recently received a grant from ADOT to extend the municipal sewer line along Airport Road from Mountain Avenue in order to service the airport.
- ▶ Electricity -- Navopache Electric Cooperative Inc. supplies electricity to the airport through transmission lines located along Airport Road.
- ▶ Storm Sewer -- There are no on-airport stormwater retention or detention basins or channels at Springerville Municipal Airport. Stormwater is discharged off

the site through either absorption or sheetflow. The airport is not located within a Federal Emergency Management Agency designated floodplain.

- Solid Waste Disposal -- Refuse from Springerville Municipal Airport is currently taken to the Springerville Transfer Station, located four miles west of the airport, before being disposed of at the St. Johns Landfill, located some 30 miles north of Springerville.

Firefighting

The Town of Springerville Fire Department is located within five minutes of the airport facility. The department is volunteer staffed so response time may be somewhat longer than five minutes.

Fueling Facilities

Fuel storage at Springerville Municipal Airport consists of three underground storage tanks and a fuel truck. Two of the underground storage tanks hold 6,000 gallons each of AvGas. The remaining underground storage tank holds 4,000 gallons of Jet A. The fuel from these tanks is distributed from two fuel pumps located on the apron, in front of the FBO. None of the underground storage tanks have leak detection systems.

The fuel truck holds an additional 5,000 gallons of Jet A. It is parked on the apron, over some of the tiedown spaces on the southwestern end of the apron.

AIR TRAFFIC ACTIVITY

Before forecasting, future activity levels at Springerville Municipal Airport, it is necessary to evaluate the historical numbers of operations and the types of aircraft based on and using the airport.

Springerville Municipal Airport currently serves general aviation activity. General Aviation includes every type of civil flying other than commercial (defined as scheduled passenger and/or freight service regulated by the FAA) or military operations.

According to the Apache County Economic Security Corporation (ACES), Springerville Municipal Airport supports approximately 300 air ambulance flights per year. Springerville is also the headquarters for the Apache-Sitgreaves National Forest. During the summer fire season the USFS stations smoke jumpers and spotter aircraft at the airport. In addition, both CSI and Bank One operate daily cargo/delivery flights into the airport. Other regular airport users are Tucson Electric Power, ADOT, Arizona Department of Public Safety, Stone Container, and Tom Chauncey, owner of the John Wyane 26 Bar Ranch. The last two fly Citation and Canadian Jets, the remainder primarily use turboprops and twin-engine piston aircraft.

Table 1B, Historical Aviation Data, provides available historical data for based aircraft and total operations. An operation is defined as any takeoff or landing performed by an aircraft. At airports that do not have an air traffic control tower, such as Springerville Municipal Airport, actual airport activity data is not always available; in these cases, historical records of activity are typically estimates.

TABLE 1B
Historical Aviation Data
Springerville Municipal Airport

Year	Number of Based Aircraft	Number of Operations
1990 ¹	12	7,986
1991 ²	30	9,510
1992 ²	30	8,580
1993 ²	30	8,580
1994	26 ³	9,300 ⁴

SOURCES: ¹ State of Arizona Aviation Needs Technical Report, 1990.
² Federal Aviation Administration 5010 Forms.
³ Interviews with Fixed Base Operator.
⁴ Results of Air Traffic Counter Analysis.

The rapid increase in based aircraft between 1990 and 1991 is attributable to the arrival of Aerocrafter as the airport's FBO. Aerocrafter owns and/or maintains a large number of aircraft. Part of the difference may also be attributable to the status of seven aircraft which are parked/hangared immediately adjacent to airport property. It is possible that these aircraft were not counted in the State Aviation Needs Study, but were counted on the FAA 5010 Forms.

AIRSPACE AND AIR TRAFFIC CONTROL

An analysis of the airspace structure in the vicinity of the airport is necessary to determine the operational interaction among various types of airspace and airspace users. Flights in and out of Springerville Municipal Airport are currently conducted using Visual Flight Rules (VFR). VFR conditions exist when flight visibility is three miles or greater and the cloud ceiling is at least 1,000 feet above the surface.

Springerville Municipal Airport does not have an air traffic control tower; therefore, no formal terminal air traffic control services are available. Air traffic advisories and weather information services are provided by the Unicom operator. Enroute air traffic control services are provided through the Albuquerque Air Route Traffic Control Center.

Exhibit 1D, provided earlier, depicts the airspace around Springerville. Given the mountainous region, the expanse of U.S. Forest Service lands, the Indian Reservations, and the low population density, there are a limited number of airports in the vicinity of Springerville.

AIRPORTS

There is only one public airport within 30 NM of Springerville Municipal Airport. St. Johns Industrial Air Park is located approximately 24 NM north of Springerville in St. Johns, Arizona. The Air Park is equipped with two runways. Runway 14-32 is a 5,323 foot paved runway with a pavement strength of 60,000 pounds SWL.

The crosswind runway, Runway 2-20, is 3,400 feet in length and has a pavement strength of 40,000 pounds SWL.

Three additional public airports are located between 30 and 50 NM of Springerville Municipal Airport. Whiteriver Airport is located approximately 39 NM southwest of the airport, and provides a 6,288 foot paved runway. Show Low Municipal Airport is located approximately 35 NM west-northwest and provides two runways, one at 6,000 feet and a crosswind at 3,939 feet. Finally, Taylor Airport is located approximately 44 NM northwest of Springerville and provides a 7,200 foot paved runway. White Mountain Lake is a private airport located approximately 35 NM northwest of Springerville Municipal Airport and is equipped with a 4,000 foot long paved runway.

AIRWAYS

Aircraft normally travel between airports along electronic airways. These airways are usually located between enroute navigational aids, such as VORTAC's and VOR-DME's, thereby helping pilots to maintain their course. There are two airway systems: the *Low Altitude System (Victor Airways)*, and the *High Altitude System (Jet Routes)*. The Victor Airway System begins at 1,200 feet above ground level (AGL) and extends upward to 18,000 feet mean sea level (MSL). The Jet routes are layered above the Victor Airways, beginning at 18,000 feet MSL and extending upward to 45,000 feet MSL.

There are four Victor Airways in the vicinity of Springerville Municipal Airport. Victor 190 is a northeast to southwest airway crossing within 12 NM northwest of the airport. This airway is used to fly between Albuquerque and Phoenix, using the St.

Johns VORTAC. Victor 528 runs 17 NM north-northwest of the airport and connects both Phoenix and Payson with the St. Johns VORTAC. Victor 264 is a east to west airway located within 24 NM north of the airport, it connects the Prescott and Winslow VORTACS to the west with the Socorro VORTAC to the east through the St. Johns VORTAC. Finally Victor 234, located within 28 NM northeast of Springerville Municipal Airport, connects the St. Johns VORTAC with Albuquerque through a different route than V190.

There are two Jet Routes in the general vicinity of Springerville Municipal Airport. The closest of these is J86 which runs from northwest to southeast, between El Paso, Texas and Las Vegas, Nevada, using the Winslow VORTAC. The other Jet Route is J18, a southwest to northeast route running between San Diego, Phoenix, Albuquerque and points east. This route is located within 22 NM northwest of Springerville.

In addition to the civilian airways there are four Military Training Route airways in the vicinity of Springerville Municipal Airport. Military Training Route VR-176 is located 18 NM southeast of the airport, within the Reserve Military Operating Area. Military Route IR-276-320 is located 22 NM northwest of the airport. Military Route IR-122 is located 19 NM north-northeast of Springerville Municipal Airport starting at the St. Johns VORTAC and running east-southeast. Finally Military Route IR-274 is located 17 NM southwest of the airport, within the Jackal Military Operating Area.

AIR TRAFFIC PROCEDURES AND OPERATIONS

Air traffic at Springerville Municipal Airport flies in a standard traffic pattern around the airport (i.e. left turns). Because facilities at

Springerville Municipal Airport do not include an air traffic control tower, no air traffic direction is given to pilots.

MILITARY OPERATING AREAS

Military Operating Areas (MOAs) contain airspace, as defined by vertical and lateral limits, for the purpose of separating certain military training activities from instrument flight rule (IFR) traffic (typically jets). When an MOA is being used by the military, nonparticipating IFR traffic must be cleared through the MOA. Cleared air traffic must maintain the minimum separation assigned by the air traffic control facility having jurisdiction within the area.

There are two MOAs located south of Springerville Municipal Airport. The Reserve MOA is located 8 NM south and the Jackal MOA is located 15 NM southwest of the airport. Neither of these MOAs influence the operations into or out of Springerville Municipal Airport.

NEARBY NATIONAL PARK AREAS

The landing of aircraft is prohibited on lands or waters administered by the National Park Service, U.S. Fish and Wildlife Service or U.S. Forest Service, without authorization. In addition, all aircraft are requested to maintain a minimum altitude of 2,000 feet above the surface of designated National Park Areas, the definition of which includes U.S. Forests, Wilderness Areas and Primitive Areas. FAA Advisory Circular (AC) 91-36C, *Visual Flight Rules (VFR) Flight Near Noise-Sensitive Areas*, defines the surface as the highest terrain within 2,000 feet laterally of the route of flight, OR the upper-most rim of a canyon or valley.

Springerville Municipal Airport is located less than three (3) NM north of the Apache National Forest. Two wilderness areas and two primitive areas have been designated within the nearby National Forest. The Escudilla Wilderness Area is approximately 13 NM southeast and the Bear Wallow Wilderness Area is approximately 32 NM south-southwest of the airport. The Mount Baldy Primitive Area is approximately 14 NM southwest and the Blue Range Primitive Area is approximately 28 NM south-southeast of Springerville Municipal Airport (see Exhibit 1D).

SOCIOECONOMIC FACTORS

A variety of historical and forecast socioeconomic data, related to the Springerville Municipal Airport area was collected for use in various elements of the Master Plan. This information is essential in determining aviation service level requirements, as well as forecasting the number of based aircraft and aircraft activity at the airport. Aviation forecasts are normally directly related to the population base, economic strength of the region, and the ability of the region to sustain a strong economic base over an extended period of time.

POPULATION

An analysis of population growth in the Springerville/Eager area was obtained from the Arizona Department of Economic Security (DES). Table 1C, *Historical and Projected Population Statistics*, provides a population breakdown for Springerville, Eager, Apache County and the State of Arizona. The historical data is based on the U.S. Census (1950-1990) and estimates by the State of Arizona (1993). Projected

population estimates for Springerville, Eager and Apache County were compiled by the

DES from data provided by the Northern Arizona Council of Governments.

TABLE 1C Historical and Projected Population Statistics				
Year	Springerville	Eager	Apache County	State of Arizona
HISTORICAL POPULATION				
1950	689	637	27,767	749,587
1960	719	873	30,438	1,302,161
1970	1,151	1,279	32,304	1,775,399
1980	1,452	2,791	52,108	2,716,546
1990	1,802	4,025	61,591	3,665,228
1993	1,845	4,495	63,050	3,958,875
PROJECTED POPULATION				
1995	1,909	4,698	66,300	4,134,925
2000	2,050	5,044	72,200	4,632,875
2005	2,217	5,455	78,500	5,132,775
2010	2,417	5,948	85,475	5,652,525
2015	2,647	6,513	93,175	6,811,900
SOURCE: Arizona Department of Economic Security, Research Administration, Population Statistics Unit.				

According to the table, the Towns of Springerville and Eager have experienced healthy increases in their combined population since 1950, growing by an average of 3.71 percent each year. During the same period, the State of Arizona, as a whole, experienced an average annual growth rate of 3.95 percent. While the State's increase in population is attributable to the high amount of in-migration, primarily to the Phoenix and Tucson areas, Round Valley's increase is attributed to natural growth combined with the influx of a few, significant industries.

Between 1995 and 2015, the State of Arizona projects that the populations of Springerville and Eager will increase by a

combined average rate of 1.65 percent annually and comprise roughly 10 percent of the County population. Apache County is expected to continue to be one of the least populated counties in the State, comprising only about 1.5 percent of Arizona's total population. The limitations to the County's population growth are the likely result of the limited land area available for general development; the majority of the County is comprised of the Navajo, Fort Apache and Zuni Indian Reservations, Sitgreaves-Apache National Forest, and Petrified Forest National Park. In addition, the State of Arizona and the Bureau of Land Management also control a number of areas in the county.

EMPLOYMENT

Table 1D, **Springerville, Eager and Apache County Employment**, provides a breakdown of the employment sources in the area, by percentages. Approximately half of the combined Springerville and Eager working population is employed in either the Services (motels, restaurants, medical care, etc.) or Trade (wholesale and retail) employment sectors. The percentage of the County population employed in these two

sectors is slightly higher, with the Services sector dominating. This implies that a significant portion of the local population is employed in support of the year-round tourist population. Round Valley is located at the edge of the White Mountains, a camping, hunting, fishing and skiing destination in eastern Arizona and the County is home to the Petrified Forest National Park, Painted Desert and Canyon de Chelly National Monument.

TABLE 1D
Springerville, Eager and Apache County Employment

Employment Sectors	Percent of Total		
	Springerville	Eager	Apache County
Agriculture/Mining	7.30	4.55	5.16
Construction	12.84	9.70	8.88
Manufacturing	13.92	11.81	5.06
TCPU ¹	7.16	16.16	10.63
Trade	25.14	21.77	14.65
FIRE ²	3.65	1.91	2.50
Services	26.22	28.89	42.96
Public Administration	3.78	5.21	10.15

NOTES: ¹ Transportation, Communication and Public Utilities

² Finance, Insurance and Real Estate

SOURCE: 1990 Census of Population and Housing; Arizona Department of Economic Security, Research Administration, Population Statistics Unit

Other occupational sectors which provide a significant amount of local employment are the Construction, Manufacturing and TCPU sectors. The Manufacturing sector reflects the local sawmill businesses: Precision Pine, Stone Container and Reidhead; the TCPU sector reflects the two power plants located between St. Johns and Springerville: Salt River Project and Tucson Electric Power.

According to local officials, employment in the region is expected to increase rapidly over the next few years. Construction was

recently completed on a new minimum security State prison, located halfway between St. Johns and Springerville. When open, the prison will employ between 150 and 200 employees. In addition, two manufacturing firms are planning to locate in Springerville, near the airport. Initially, these firms, combined, will hire approximately 100 employees, potentially growing to 500 employees in the foreseeable future.

The recently formed Apache County Economic Security Corporation (ACES) is

also working toward increasing the manufacturing base in the region. Formed in late-1993, they are actively seeking to attract new businesses to the area and assist in local business retentive and expansion efforts. ACES is currently assisting several major projects which could add several hundred jobs to the southern Apache County economy. In addition, one of the electrical power plants in the area has loaned to ACES the use of two empty buildings to serve as incubators for new businesses. The group has designated an area 15 miles north of Springerville to serve as the area's regional business center and has obtained State Enterprise Zone and Rural Economic Development Institution designations for the region.

Finally, the Town of Springerville is pursuing having the Casa Malpais ruins dedicated as either a National Park or as an Affiliate. Designation as an Affiliate places the ruins on maps as if they were National Parks, but leaves responsibility for the facility in local hands. Either designation would be expected to significantly increase the number of tourists to the area. This increase in tourists would be expected to

result in a further increase in the Service sector, meaning an increase in hotels/motels, restaurants and entertainment facilities.

INCOME

Per capita income for Apache County has grown steadily throughout the last decade; however, it remains well below that of both the State of Arizona and the United States, even the Non-Metro areas. Table 1E, **Per Capita Income**, compares the per capita income for Apache County, the State of Arizona, and the United States. Based on information provided by the Arizona Department of Economic Security, Apache County has the lowest per capita income of all the counties in the State. This is due in part to the presence of the Navajo, Fort Apache and Zuni Indian Reservations and may not be reflective of the Springerville/Eager area.

According to ACES, the National Decision Systems Company reports that income levels in the Springerville area are generally 70% higher than the county as a whole.

TABLE 1E
Per Capita Income

Year	Apache County	State of Arizona		United States	
		Non-Metro	Total	Non-Metro	Total
1987	\$6,761	\$10,333	\$14,524	\$11,875	\$15,636
1988	\$6,881	\$10,703	\$15,061	\$12,476	\$16,610
1989	\$7,676	\$11,229	\$15,639	\$13,458	\$17,690
1990	\$8,107	\$12,005	\$16,262	\$14,266	\$18,667
1991	\$8,674	\$12,467	\$16,697	\$14,761	\$19,163
1992	\$9,623	\$13,222	\$17,401	\$15,628	\$20,105

SOURCE: Arizona Department of Economic Security, Research Administration, July 1994.

TOURISM

The Town of Springerville is located on the eastern boundary of the White Mountains recreational areas. According to ACES, the Northern Arizona University, Arizona Hospitality Research and Resource Center of the School of Hotel and Restaurant Management has documented that approximately 4.3 million visitor days are spent annually in the Apache-Sitgreaves National Forest. It is estimated that approximately one million of these visitor days are spent in Apache County in recreation areas near Springerville.

In addition to the Casa Malpais ruins, the Mountains recreation area offers a number of significant, prehistoric archaeological sites which are open for visitors, including Raven Site, Rattlesnake Ruins and a number of petroglyph trails near Lyman Lake. An "Archaeological Corridor" trail is being developed which will connect Zuni Pueblo in New Mexico with St. Johns, Lyman Lake, Raven Site, Casa Malpais, and Springerville before continuing into Navajo County. According to a 1992 Diversification Study funded by the U.S. Forest Service; the Casa Malpais ruins are expected to attract from 82,500 to 100,100 visitors annually within its first five years of full operation.

The Round Valley Ensphere (Dome), another tourist attraction, is an enclosed arena located in Round Valley. It accommodates year-round sports, trade and civic events. According to the Diversification Study, the Dome would be expected to attract over 120,000 attendees annually within its first five years of operation, provided improvements are made to the local hotel/motel facilities, additional support services are added and an effective, targeted, marketing effort is developed and executed.

Other tourist destinations, either existing or proposed, within the Springerville area include the Sunrise Ski resort, casino gambling on the White Mountain reservation and eco-tourism activities.

LAND USE PLANNING AND JURISDICTIONAL CONSIDERATIONS

An evaluation of existing land uses, zoning regulations and future planning in the vicinity of Springerville Municipal Airport aids in determining the compatibility of the airport with its neighbors. This information will be used to develop an airport master plan which is compatible with local, regional and state long-range planning goals, objectives and policies; and to evaluate the strengths and weaknesses of local regulatory control to ensure continuing compatibility of the surrounding area with the airport.

Springerville Municipal Airport is located within the corporate boundaries of Springerville, Arizona. The Town of Eager, Arizona is located immediately south and southeast of the airport. The Apache National Forest boundary is less than three miles south of the airport. Unincorporated Apache County is located north and west of the airport.

Exhibit 1E, *Existing Land Uses*, illustrates the existing land uses in the vicinity of Springerville Municipal Airport. The airport is located on a low mesa adjacent rangeland to the north, west and south. Along the southeast side of Runway 3-21 is a private hangar, some commercial enterprises and a few residences along Williams Road and Sky Bolt Lane. Further east-northeast is a small residential development off of Becker Lake Road,

known as Coronado Acres. These residences are located at an elevation approximately 40 feet below the taxiway adjacent Runway 21. Additional, scattered residences are located north of the airport on Becker Lake Road and east/southeast of the airport in the villages of Springerville and Eager.

The Town of Springerville has zoned the airport as I-1, General Industrial. No residential land uses are permitted in this zone. The remaining area around the airport, in Springerville, is zoned AR-43 (Agricultural-Residential "43"), AR-20, RI-20 (Residential "20"), and AG (Agricultural); these each permit low-density residential developments in densities of from 0.5 to 2 units per acre. The Town has not adopted a special ordinance to address noise and airspace issues in the vicinity of the airport. The I-1 zone does require that "structures near airplane runway or landing strips ... comply with current FAA regulations and guidelines as to placement, height and size." In addition, the zoning ordinance requires that noise not be permitted "which is loud enough to create a nuisance or hazard beyond the property lines."

South and east of the airport, the Town of Eager has zoned the area AG, Agriculture.

This zone permits low-density residential developments in densities of less than 0.5 units per acre. According to the Town's General Plan, this area is intended for a combination of rural and low-density residential development (i.e. 0-4 units per acre) and park/open space along the Little Colorado River.

North and west of the airport, Apache County has zoned the area Agricultural General, permitting low-density residential development (i.e. one unit per acre). The County does not currently have any long-range plans for the area.

SUMMARY

This chapter has examined those factors and issues which will have the greatest affect on the future development of Springerville Municipal Airport. The data collected for this chapter provides the information necessary to perform subsequent analyses. It also provides the proper perspective from which to develop a realistic Master Plan that will meet the needs of Springerville, Eager and Apache County, Arizona, and the surrounding area.